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ABSTRACT

This study investigated the contributions of parent, infant, and contextual variables to the prediction of maternal ratings of infant temperament. Between the time when they gave birth and six months after the birth, 104 mothers completed measures of parenting attitudes, maternal anxiety and depression, family social support, demographic information, maternal self-efficacy, and infant crying and fussiness. Maternal ratings and impressions of infant temperament were assessed at six months after birth. The ratings concerned specific infant behaviors, while the impressions concerned the mother's perceptions of her infant compared to other infants of the same age. Results indicated that maternal reports of support and anxiety at birth, self-efficacy at four months, and infant fussiness at two months correlated with maternal ratings of infant temperament at six months. Variables that correlated with maternal impressions of infant temperamental difficulty at six months included maternal age; maternal support, depression, and self-efficacy at four months; and maternal anxiety at birth. Regression analyses revealed a different set of predictor variables for maternal ratings and impressions of infant temperament at six months. Seven references are cited. (Author/BC)

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PARENT, INFANT, AND CONTEXTUAL PREDICTORS OF SIX MONTH TEMPERAMENT RATINGS AND IMPRESSIONS

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ABSTRACT

A prospective, longitudinal study investigated the contributions of parent, infant, and contextual variables to the prediction of subsequent infant temperament ratings and impressions. 104 mothers completed measures of parenting attitudes, anxiety, depression, self efficacy, infant crying/fussiness and family social support at various points following the birth of their child. Infant temperament ratings and impressions were assessed at six months of age. Maternal reports of support and anxiety at birth, self efficacy at four months, and infant fussiness at two months correlated with subsequent ratings of infant temperament. Maternal support, depression, and self efficacy at four months, anxiety at birth, and age correlated with maternal impressions of temperamental difficulty. Stepwise regression analyses also revealed that the predictors of maternal ratings and impressions of infant difficulty differed.

INTRODUCTION

The relationships of parent, infant, and contextual variables assessed early in infancy to maternal report of infant temperament at 6 months was investigated. The rationale for the study is based on two main considerations. First, there is considerable evidence linking infant temperament to later developmental outcomes (e.g., intellectual competence, accidents and injuries, and child behavior problems). Whether these links are direct or are mediated indirectly by the impact of infant temperament on parental attitudes and interaction patterns is not clear. Secondly, relatively little is known about the factors which contribute to infant temperament. While temperament is generally believed to reflect some biological influences, research suggest that temperament is subject to environmental influences as well and may change over time. Longitudinal, prospective studies examining the relationship of psychosocial factors to infant temperament are needed to clarify this issue.

The variables investigated in this study were selected using a conceptual model derived from the work of Sameroff (1975) and Belsky (1984). According to Sameroff (1975), environmental and infant characteristics reciprocally influence on another over time, each contributing to the nature of ongoing interactions and shaping the course of behavior and development. For example, an early difficult temperament may present a stress to new parents, contrast with parental expectations of "appropriate" infant behavior, elicit certain negative parental response, and undermine parental feelings of adequacy, all of which may

negatively influence the parent-child relationship and set the stage for continued difficulties. Further, Belsky (1984) has proposed that behavior is multiply determined. He outlines three major sources of influence; parental contributions, infant characteristics, and contextual sources of stress and support. The current study taps aspects of each domains to examine their contribution to infant temperament at six months of age.

The present study utilized two different types of temperament variables: (1) maternal ratings of temperament which are designed to tap specific infant behaviors, and (2) maternal general impressions of temperament which assess global perceptions of the infant as compared to other infants of a similar age. Recent research has begun to distinguish between these two types of measures as they have differential predictive power.

METHOD

From September 1988 to June 1990, new mothers who would be utilizing a local university pediatric practice for their infant's health care were contacted on the maternity ward and asked to complete the Attitudes Towards Parenting Scale, State-Trait Anxiety Scale, Family Social Support Scale, and a short demographic form following their infant's birth. Mothers received the remaining measures during their infant's routine pediatric health visits scheduled at two weeks, and two, four and six months postpartum. Measures were completed at home and returned by mail.

MEASURES

The Attitudes towards Parenting Scale (ATP; Crockenberg & Smith, 1982) is a 10 item questionnaire designed to assess parental attitudes towards responsivity to their infant's crying and fussy signals. The ATP was completed at birth, with mothers indicating their expected responsivity to their infants' cues. At four months postpartum, mothers were asked to rate their current level of responsivity to their infant.

Parenting Stress Inventory (PSI; Abidin, 1986) is a 101 self report measure assessing stress within the parent, child and parent-system. Only two of the PSI subscales were included in the present study; maternal depression and feelings of self efficacy. The depression scale reflects maternal report of depressive symptoms and correlates moderately with the Beck Depression Inventory. The self efficacy scale assesses maternal competence, primarily in regards to her parenting abilities. The PSI was completed by mothers at four months postpartum.

State Trait Anxiety Scale (STAI; Spielberger, Gorush, & Lushene, 1970) is a 40 item questionnaire designed to assess both transient and more generalized reports of anxiety. The STAI is scored to form state and trait subscale scores and was administered to mothers at birth and four months postpartum.

Crying Questionnaire is a 17 item questionnaire that was developed in the current study to assess early infant difficulties associated with colic. The items on this questionnaire ask mothers to indicate the frequency, timing and

characteristics of their infants' crying and fussy behaviors. Based upon factor analyses results, items pertaining to fussy and crying behaviors were summed to form a total fussiness score; this score was used in the analyses presented in this paper. The crying questionnaire was completed by mothers at two weeks and two months postpartum.

The Revised Infant Temperament Questionnaire (RITQ; Carey & McDevitt, 1978) consists of 95 statements describing specific infant behaviors in certain situations (e.g., reactions to new foods or strangers). Parents rate the frequency with which the statement is currently true of their infant on a 6 point scale ranging from (1) almost never to (6) almost always. The RITQ yields scores on nine individual dimensions of temperament (rhythmicity, intensity, mood, adaptability, approach, activity, distractibility, persistence, and threshold) as well as yielding an overall easy/difficulty score based on the summation of the scores on the first five of these dimensions. Only the difficulty/easy summary score was included in the following analyses.

Global Impressions of Temperament Scale (GITS; Carey & McDevitt, 1978)is an 11 item questionnaire contained a separate page that is attached to the RITQ. The parent is asked to give an estimate of the infant's behavior as compared to that of other babies of a similar age in each of the nine RITQ dimensions and to indicate whether they consider the infant overall as easy, difficult or somewhere in between. An easy/difficulty summary score is

computed as with the RITQ, and is based upon a summation of parental impressions on the same five individual dimensions.

Family Social Support Scale (FSS; Trivette & Dunst, 1988) is a 19 item questionnaire which asks the respondent to indicate how helpful a variety of social support sources have been on a four point scale ranging from (0) not at all helpful to (4) extremely helpful. The FSS can be scored to form a subtotal of both formal (e.g., professional sources) and informal (spouse, friends) sources of support as well as a total score based upon the sum of all 19 items. The FSS was completed by mothers at birth and four months postpartum.

The Demographic Questionnaire is a item background questionnaire designed to obtain demographic information including the child's parents' education, age, marital status, current living situation, and the number, ages, and gender of additional children. The demographic form was administered at birth and at four and six months postpartum.

RESULTS

Pearson Product Moment correlational analyses indicated that maternal reports of higher state and trait anxiety at birth, lower feelings of maternal self efficacy at four months, greater infant fussiness at two months and less available informal support at birth were significantly related to ratings of infant difficulty assessed at six months (r=.31 p<.003, r=.30 p<004, r=.25 p<.03, r=.25 p<.009, r=-.23 p<.03; respectively). All of these variables remained significantly associated with maternal

ratings of infant difficulty when early infant characteristics (e.g., fussiness at two months) were controlled.

In regards to maternal impressions of infant difficulty, maternal trait and state anxiety at birth, lower maternal self efficacy, greater symptoms of depression at four months and less available informal support at four months were associated with maternal impressions of greater infant difficulty at six months (r=.23 p<.03, r=.39 p<.004, r=.34 p<.002, r=.23 p<.03, r-=.24 p<.03, respectively) Also, younger mothers tended to view their infants as more difficult (r=-.22 p<.03). Maternal self efficacy, depression and informal social support remained significantly associated with impressions of infant difficulty at six months even when prior infant characteristics were controlled.

A series of stepwise multiple regression analyses was performed using demographic information (parity, maternal age and education) as well as those variables that reached significance in the correlational analyses presented above. Ratings and impressions of infant difficulty served as dependent variables in separate regression analyses.

Results indicated that greater infant fussiness at 2 months, maternal reports of greater state anxiety at birth, and diminished feelings of maternal self efficacy at 4 months combined to predict maternal ratings of greater infant difficulty at 6 months (r=.48, p<.004), accounting for 23% of the variance.

In contrast, maternal report of lower self efficacy at four

months in combination with younger maternal age predicted maternal impressions of infant difficulty at six months (r=.44, p<.01) accounting for 19% of the variance.

CONCLUSION

In accordance with Belsky's model of parental functioning and child development, correlational analyses indicated that aspects of the parent, infant, and context were significantly related to subsequent temperament as assessed by both maternal rating and impression inventories. Stepwise regression analyses indicated that the predictors of difficulty ratings differed from the results of maternal impressions of infant difficulty. Although the results are preliminary, they support the distinctiveness of temperament ratings and impressions, and suggest a need for further research. Further, results highlight potential targets of early intervention/prevention efforts. That is, intervention approaches could attempt to alter variables which contribute to the development of this risk factor, rather than attempting to more directly modify infant temperament. For example, interventions that focus on enhancing maternal social support or alleviating maternal anxiety may in turn influence both maternal responses and subsequent infant temperament.

Overall, findings suggest a need for continued longitudinal research investigating not only the factors which contribute to the development of infant temperament but also those which combine or interact with temperament to predict subsequent behavior and development. This type of research is critical to

help better identify those families in need and to help design effective intervention strategies.

Table 1

Timing of Assessments

	Birth	Two Weeks	Two Months	Four Months	Six Months
Parent					
Attitudes	*			*	
Depression				*	
Self efficacy				*	
Anxiety	*			*	
Infant					
Fussiness		*	*		
Temperament:					
Ratings					*
Impressions					*
Contextual					
Social support	*			*	
Demographics	*	*	*	*	*

Table 2

Correlational Analyses of Parental, Infant and Contextual Variables and Infant Temperament at Six Months

Maternal Ratings of Temperament

Variable	Time of Assessment	r	p
Informal Support	Birth	.23	.03
State Anxiety	Birth	.31	.01
Trait Anxiety	Birth	.30	.01
Self Efficacy	Four months	.25	.03
Infant Fussiness	Two months	.25	.01

Maternal Impressions of Temperament

Variable	Time of Assessment	r	p
Trait Anxiety	Birth	.23	.03
State Anxiety	Birth	.39	.01
Informal Support	Four Months	.24	.03
Self Efficacy	Four Months	.34	.01
Depression	Four Months	.23	.03
Maternal Age	Birth	.22	.03

Table 3

Stepwise Multiple Regression Analyses of Parent, Infant and Contextual Variables with Infant Temperament at Six Months

Maternal Ratings of Temperament

Predictor Variable	Time of Assessment	r	Adj. r^2
State Anxiety	Birth		
Infant fussiness	Two months	.48	23%
Self Efficacy	Four months		

Maternal Impressions of Temperament

Predictor Variable	Time of Assessment	r	Adj. r^2
Self Efficacy	Four months	.44	19%
Maternal Age	Birth		

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